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# **Notice of Allowability**

**Application No.**

10/084,879

**Examiner**

Michael Y. Won

**Applicant(s)**

KARAGIANNIS ET AL.

**Art Unit**

2155

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the Amendment filed September 6, 2007 and Interview conducted on October 11, 2007.
2. ☒ The allowed claim(s) is/are 1-31 and 33-46 (renumbered 1-45).
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

## **Attachment(s)**

- |  |   |
|--|---|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892)   | 5. <input type="checkbox"/> Notice of Informal Patent Application                                 |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),<br>Paper No./Mail Date _____    | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment                               |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material | 8. <input type="checkbox"/> Examiner's Statement of Reasons for Allowance                         |
|  | 9. <input type="checkbox"/> Other _____.  |

### EXAMINER'S AMENDMENT

1. This action is in response to the amendment filed September 6, 2007.
2. Claims 1, 22, and 36 have been amended.
3. Claims 1, 22, and 36 previously rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement, has been withdrawn.
4. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.
5. Authorization for this examiner's amendment was given in a telephone interview with Sidney L. Weatherford on October 11, 2007.
6. The application has been amended as follows:
  1. **(Currently Amended)** A method of seamlessly handing off a mobile node from an old sub-network router to a new sub-network router in an Internet Protocol based wireless access network comprising:

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obtaining a handoff starting time from a lower layer complying with Open Systems Interconnections (OSI) model;

using information from the lower layer of the OSI model to notify the mobile node that a connection with the old sub-network router will be discarded within a predetermined amount of time;

obtaining a new care-of address for the mobile node from the new sub-network router;

sending a request message from the mobile node to a base node via the new sub-network router requesting a new binding;

creating a new care-of address binding in the base node;

issuing two registration reply messages, one from the base node to the mobile node wherein a registration reply message is sent to the new care-of address via the new sub-network router indicating that the new care-of address binding has been created and a deregistration reply message (DRR) is sent from the base node to the old care-of address via the old sub-network router notifying the mobile node that binding with the old care-of address has been removed; and

utilizing the deregistration reply message (DRR) to synchronize a transfer of old care-of address data packets stored on the old sub-network router to the mobile node. ~~the, the~~ home agent sends sending the two registration reply messages ~~(one of them is the DRR)~~ including the DRR after receiving the registration request message and by using the DRR as a synchronisation synchronization point.

22. **(Currently Amended)** An Internet Protocol based wireless access network, comprising:

a lower layer complying with Open Systems Interconnections (OSI) model wherein a handoff starting time is obtained;

a mobile node adapted to obtain a new care-of address from a new sub-network router, and to issue a request message via the new sub-network router requesting a new binding, upon being notified from the lower layer of the OSI model that a connection with an old sub-network router will be discarded within a predetermined amount of time; and

a base node adapted to create the new care-of address binding upon receiving the request message from the mobile node and to issue, at the same time, two registration reply messages being sent to both the old sub-network router and the new sub-network router, including:

a registration reply message to the mobile node via the new sub-network router indicating that the new care-of address binding has been created, wherein the base node is adapted to delete an old care-of address binding therefrom upon receiving a deregistration request message and

a deregistration binding acknowledgment message to the mobile node via the old sub-network router indicating that the old care-of address binding has been deleted; wherein the mobile node and the base node are further adapted to utilize the deregistration ~~reply~~ binding acknowledgment message to synchronize the transfer of old care-of address data packets stored on the old sub-network

router from the base node to the mobile node in a synchronized manner, the base node sending the two registration reply messages including the deregistration binding acknowledgment message after receiving the registration request message and using the deregistration binding acknowledgment message as a synchronization point.

36. **(Currently Amended)** A method of handing off a mobile node from an old sub-network router to a new sub-network router in an Internet Protocol based wireless access network, comprising:

obtaining a handoff starting time from a lower layer complying with Open Systems Interconnection (OSI) model;

using information from the lower layer of the OSI model to notify the mobile node that a connection with the old sub-network router will be discarded within a predetermined amount of time;

obtaining a new care-of address for the mobile node from the new sub-network router;

sending a request message from the mobile node to a base node via the new sub-network router requesting a new binding, the base node being predetermined one of a home agent, a gateway foreign agent, and a mobility anchor point;

creating a new care-of address binding in the base node;

issuing two registration reply messages from the base node to the mobile node to both the old sub-network router and the new sub-network router:

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a registration reply message via the new sub-network router indicating that the new care-of address binding has been created and

a deregistration reply message (DRR) via the old sub-network router indicating that the old care-of address binding has been deleted; and

utilizing the deregistration reply message (DRR) to synchronize a transfer of old care-of address data packets stored on the old sub-network router from the base node to the mobile node, the home agent sending the two registration reply messages including the DRR after receiving the registration request message and using the DRR as a synchronization point.

***Allowable Subject Matter***

7. Claims 1-31 and 33-46 are allowable over prior art of record in light of the arguments presented in the Amendment filed September 6, 2007 and the Examiner's Amendment above.
8. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

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9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Y. Won whose telephone number is 571-272-3993. The examiner can normally be reached on M-Th: 7AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Saleh Najjar can be reached on 571-272-4006. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael Won/

Primary Examiner

October 12, 2007